

DENVER PC BOARDWATCH

NEWSLETTER FOR ELECTRONIC BULLETIN BOARDS AND ON-LINE SERVICES

Editor: Jack Rickard Volume III: Issue 1 ISSN: 0894-5209 January 1989

THE BBS LIST

This month Denver PC Boardwatch presents a list of **200** bulletin boards/on-line services available in area code **303** - see page **16**. A total of **8** Bulletin Board Systems (BBS) were deleted from the December 1988 list with **12** additions. Each number is verified by actual telephone contact within the **30** days preceding publication. Additions and major changes to the list are highlighted in bold-face type. Corrections may be addressed via the Denver PC Boardwatch Echomail Conference, by Fidonet Mail addressed to **JACK RICKARD** via Net **104** Node **555** at **(303)973-4222**, **JACK.RICKARD** on the General Electric GEnie information service, or **BOARDWATCH** on the new **1-976-GEIS** service.

TELE-BITS

US WEST GATEWAY DEBUTS IN OMAHA

The breakup of the Bell Telephone system officially began December 31, 1983 under the watchful eye of Judge Harold Greene. In March of 1988 Judge Greene ruled that the Regional Bell Operating Companies (RBOC) would be permitted to provide electronic mail and voice mail services, and information "gateways" while still barring the RBOC from producing information products themselves. BellSouth has already activated such a gateway in Atlanta. Southwestern Bell will introduce one in Houston as soon as they quit fighting with local BBS operators, and Pacific Bell is currently holding seminars to attract information providers for their planned gateway. US West has announced the planned introduction of their own gateway offering - in Omaha Nebraska. Beginning next fall, computer users in Omaha will be able to access "several hundred" information services via the gateway according to the November 22 press release. The company expects at least **7,500** customers initially with **40-50,000** online eventually.

The planned services will include grocery shopping, stock quotes, news, airline tickets, restaurant menus, etc. The backbone of the service will be an online version of the *Omaha World-Herald* newspaper. Callers will access the services by dialing into a single telephone number using a personal computer or a small terminal leased from the company at less than **\$10** monthly. The system is patterned after the French

Minitel system. In fact, access to a number of international information services will be provided by Minitel USA, a subsidiary of France Telecom. The French system currently sports over four million terminals and some **9000** information services. Additionally, large information providers will include AVS Gateway Services, Servotel Videotext Systems, and US Videotel.

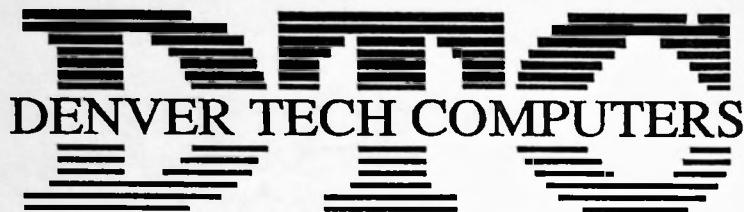
According to US West Chairman and Chief Executive Officer Jack MacAllister, Omaha was selected partially because it offers the most freedom from regulation of any state in the country. That eliminates delays for permission to offer new services and gives US WEST pricing flexibility. Denver and other cities will follow Omaha within three to five years.

43.2 MB FLOPPY DRIVE

Floppy disk drive technology continues to make some awe-inspiring advances. Last November we reported on the **Insite 20 MB Floptical drive** offering a **20 MB** capacity with **65 millisecond access time** on the **3 1/2-inch** floppy cartridge heretofore thought of as good for **720 KB or 1.44 MB**. This month, Brier Technology of San Jose announces a **3 1/2-inch** floppy disk drive capable of storing **43.2 MB** of data on a single diskette and they claim a remarkable **29 millisecond access time**. The new unit is termed the **FLEXTRA II** and uses technology quite similar to the Insite unit with a pre-defined servo track allowing much higher track densities. The unit fits right into the panel slot of an IBM PC compatible unit in the same space as a **3 1/2 or 5 1/4-inch** floppy. The device will be made available to original equipment manufacturers in large quantities at a price of **\$300 to \$450** beginning mid-1989. The **FLEXTRA II** uses a **Small Computer Systems Interface (SCSI)**. With the size and access time announced, the **FLEXTRA II** would be the functional equivalent of a Miniscribe **3053** hard drive with the exception that you could remove the storage media and stick it in your shirt pocket. Brier Technology, 2363 Bering Drive, San Jose, CA 95131; **(408)435-8463**.

INFORMATION RESEARCHERS

One career field enjoying progressive growth involves library sciences. There are currently over **3000** online databases available and thousands of other information sources. The flood of information can be overpowering, and worse, largely useless if you can't find the specific information needed. Businesses and in-



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dividuals in need of some specific research often wind up sifting through data weighed in pounds and measured in feet to find informational pearls of a scant paragraph or two - however invaluable to the task at hand. As a result, an entire industry has emerged to assist businesses in locating information. It can easily be much less expensive to pay a professional researcher a large hourly rate plus expenses than to bumble around through online services that charge from \$30 hourly to as much as \$250 for connect-time.

Inevitably, even the researchers specialize in particular types of information. Some concentrate on producing reports for the petroleum industry, acid rain subjects, the arctic environment, military specifications and standards, or the production of competitive intelligence reports. Helen Burwell of Houston has compiled a remarkable list of available fee-based fact merchants titled **DIRECTORY OF FEE BASED INFORMATION SERVICES**. The \$28.95 compilation provides over 600 listings of information professionals in 34 countries, including 39 states in the United States. It lists information brokers, freelance librarians, and others providing library and information services for a fee. The publication features some very helpful indexes to access the listings based on company name, city, personnel, services, or subject. Burwell Enterprises, Inc., 3724 FM 1960 West, Suite 214, Houston, TX 77068; (713)537-9051.

ISDN NETWORK PRODUCT

One of the most promising aspects of the coming Integrated Services Digital Network (ISDN) telephone technology is the possibility for establishing Wide Area Networks (WANs) to replace today's Local Area Networks (LANs). ISDN allows data transfer at speeds up to 64 kbps. It is quite feasible at those speeds to send your files to a printer in another room, another building, or another state through the telephone system. Not only is location no longer critical, but the systems can be moved about at will with no impact, no cables to restring, and no configurations to reconfigure. Just dial a different telephone number.

Recall from our September issue that we were quite taken by a very simple - but for many effective - serial port connection scheme. Netline's **MANYLINK** was hardly a serious LAN contender, but for hooking up a few printers and a few PC's to share files and resources, the product couldn't be simpler or more effective. Now, Netline has come up with a product called **MANYLINK FOR ISDN**. The principle is the same and even the speed remains a conservative 19,200 bps, but now the product connects PCs to each other via the AT&T 5ESS ISDN switch at the telephone company office. The bottom line is PC to PC file transfer,

messages, and printer sharing by dial-up phone at 19,200 bps - error free. Pricing unavailable. NetLine Inc., 85 West Center Street, PO Box 3000, Provo, UT 84603; (801)373-6000.

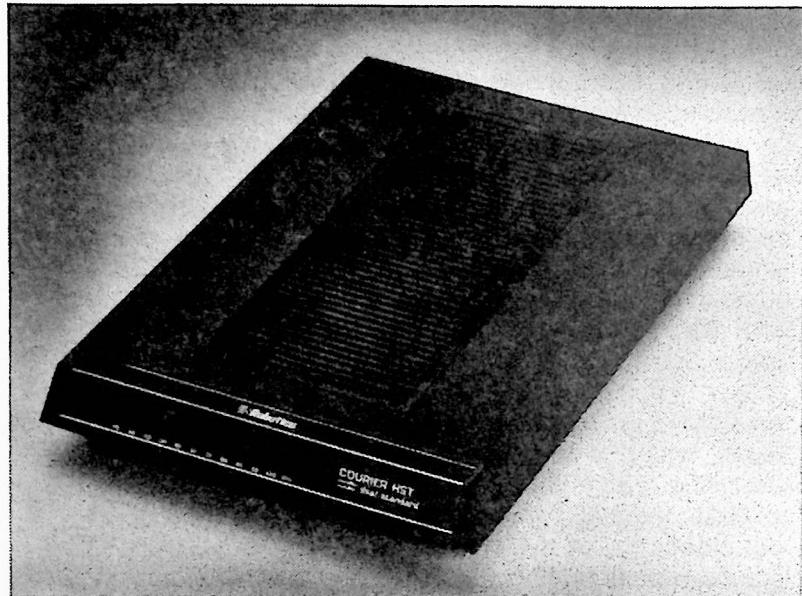
US ROBOTICS EXTENDS SYSOP DEAL TO HST/V.32 DUAL MODE MODEM

In our last issue we described the new U.S. Robotics Courier HST Dual Standard modem. U.S. Robotics Inc had announced a new 9600 bit-per-second (bps) modem compatible with both their immensely popular HST 9600 model and the CCITT V.32 standard for full duplex 9600 bps modems. The new model is termed the **Courier HST Dual Standard**. The earlier **HST 9600** technology had become the runaway defacto standard among amateur BBS hobbyists largely due to USR's generous sysop program. Under the program, operators of electronic bulletin boards could obtain an **HST 9600** for \$495, a significant discount from the \$995 list price. The international Fidonet has virtually mandated **USR** use by popular acclaim. If you want to communicate at 9600 bps within the net, you do so via **USR**.

The new model retains full compatibility with this standard. Additionally, the new model will communicate with any V.32 standard 9600 bps modem making it the first moderate priced modem to feature this capability. Currently the only official standard for 9600 bps modems in existence is the V.32 specification established by the Comite Consultatif International Telegraphique et Telephonique (CCITT). However, in the past the technology to implement V.32 was extremely expensive (\$3000 plus) partly because of the echo cancelling circuitry required to attain full duplex operations at that high speed. As a result, many modem vendors introduced half-duplex 9600 bps modems with a much slower (usually 300 bps) back channel. They termed this **asymmetrical full-duplex**. In any event, it worked and it allowed them to market modems at the 9600 bps speed at a price of around \$1000 to \$1300. The problem? No 9600 bps modem could talk to any other 9600 bps modem of a different manufacture. U.S. Robotics modems could not talk to Hayes modems or Microcom modems at the 9600 bps speed. When connected to modem of another manufacture, both were forced to fall back to 2400 bps speed. This is a good object lesson on the value of standards in the high technology field.

Finally, at last November's COMDEX, the gates broke loose on V.32 and virtually all modem manufacturers introduced a V.32 model. U.S. Robotics introduced both a V.32 modem capable of 300/1200/2400/4800/9600 bps operation, but also the Dual Standard that supported both the V.32 and the previous HST 9600 asymmetrical full duplex standard. The HST

Dual Standard also incorporates the Microcom Networking Protocol (MNP) class 5 error correction algorithm and can step down to the usual 2400 bps, 1200 bps, and 300 bps standards making this one of the most versatile modems in existence. The MNP class 5 compression algorithm allows throughputs of up to 19,200 bps when connected to another HST. The unit is priced at \$1595. However, in a continuing commitment to support of the sysop community, U.S. Robotics is extending their sysop discount to the Dual Standard model at a price of \$725. Sysops may order via the US Robotics HST 9600 support BBS at (312)982-5092. The new model should be available in January 1989. US Robotics, Inc., 8100 North McCormick Blvd., Skokie, IL 60076; (800)342-5877 voice



GOVERNMENT REPORT ON COMMUNICATIONS

The Office of Technology Assessment has completed a report to Congress on the impact of electronic communications and new technologies on freedom of speech and free press traditions. The report is titled **SCIENCE, TECHNOLOGY, AND THE FIRST AMENDMENT** and covers topics such as personal computers, electronic bulletin board systems, videotext, commercial information database services, and satellite technologies. The report is available for \$3.50 from the Office of Technology Assessment, U.S. Congress, Washington, D.C. 20510; (202)244-8713.

INTERNAL MODEM FOR TOSHIBA LAPTOPS

In a very short time, Toshiba has become the preeminent force in the laptop computer market - milling machines aside. Their T1100, T1200, T3100, and T5100 models have become the mark other laptop computer vendors aim for. Laptop computers are a natural for data communications because they are usually used in the field. Communications with the home office usually requires a modem. Yet add-on modems for laptops have historically been hundreds of dollars higher in price than ordinary modems. A 2400 bps modem offered by the laptop manufacturer will typically run over \$400.

Anchor Automation has developed a reputation for low-cost no frills modems for the desktop market. Now they've introduced a low cost internal modem designed specifically for the Toshiba laptop computer. The **ANCHOR MODEM 2400 TLT** supports 300/1200/2400 bps operation and features Hayes AT command set compatibility. The unit plugs into any of the Toshiba laptop models from the T1100 to the T5100. Best of all, Allegro Tech Distributors of Lanesboro Massachusetts offers the unit for \$178 - a respectable price for any 2400 bps unit and enormously

attractive for a laptop internal modem. Anchor Automation, Inc., 20675 Bahama Street, Chatsworth, CA 91311; (818)998-6100. Allegro Tech, Inc., PO Box 317, 114 Balance Rock Road, Lanesboro, MA 01237; (800)544-1004.

WORLDWIDE TELEPHONE DIRECTORY

The CCITT is currently considering a new telecommunications standard that would mandate a worldwide telephone directory accessible to personal computer owners. The proposed directory would list all avenues of contact including voice telephone, fax, E-mail address, telex, and so on. The new standard - largely affiliated with E-mail technologies would be termed X.500.

RUN FAX AND MODEM FROM SINGLE LINE

The emerging communications technologies are a marvel to behold. Yet the variety of modems, voice telephones, and fax machines growing out of the desktops of companies everywhere begins to look remarkably like a late 1950s grade B horror flick about ravenous plants seeking nubile young blondes for dinner. It would seem that until ISDN arrives in full measure, we will all need one telephone line for voice communications, a second for our modem and data communications, and now a third for fax. High Tech Resources of Phoenix has an expensive, but still technically attractive solution. The company markets a series of three line switches designed to connect the right device to your telephone line at the right time.

The Model V/F/M unit allows you to plug either a modem or a fax into one connector and a voice telephone into the other. Essentially, if you don't answer the telephone after a set number of rings, this model connects the line to your modem or fax machine. Once the modem or fax machine connects,

an exclusion circuit prevents interruptions from the voice line.

Model F/M/A allows connection of a modem or fax to one port and a voice line or answering machine to another. The device will connect to the fax/modem line if it detects fax tones. Alternately, it will connect to the fax/modem line if a caller presses the star key on the keypad. If no fax tone is detected and the caller does not enter a star, the switch connects to the voice line or answering machine quite automatically. In fact, you can hold a voice conversation, cut in the fax using the star key, and resume the voice conversation after the fax transmission ends.

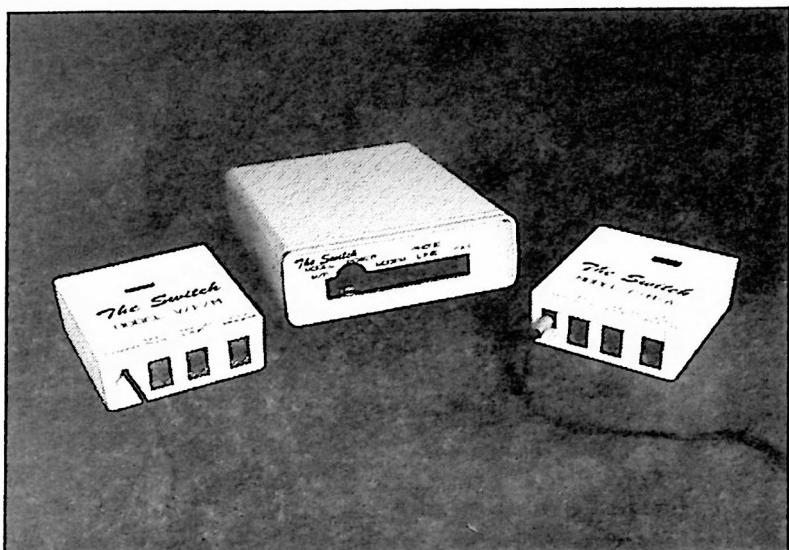
The Model M/F is specifically designed to allow a modem and fax to share a single telephone line without operator intervention of any kind. The device monitors the lines for modem tones first. If a modem tone is detected, it automatically switches the device to the modem allowing it to establish a carrier detect connection. If the device does not detect modem tones, it will connect the line to a fax machine automatically. This switch would be ideal to run both a fax machine and BBS from via a single telephone line.

The one drawback - price: \$100 to \$350. Some users may find it cheaper to simply have another telephone line installed. Still, with the average business line going for over \$35 monthly, the top end device would pay for itself within a year. High Tech Resources, Inc., 4225 W. Glendale, Suite 102, Phoenix, AZ 85051; (800)422-2382 (voice); (602)931-9851 (fax).

UPGRADE YOUR 80286

Each month vendors announce newer, faster, slicker, larger, more colorful computing machines giving off less smell, making less noise, standing taller, computing harder, thinking smarter and overall just doing one hell of a lot better job all around in the office than that creaking, doddering, slow, smelly old antique announced last month that you just bought and haven't even paid for yet. It's an accepted occupational hazard that whatever you just bought is junk already and the really neat stuff has been announced but isn't yet available. Next month it will be even worse.

Because of this we especially like cunning little devices that for a mere \$12 will make our aging **Sinclair ZX-81** emulate an **Everex 25 MHz Step 386** machine. Unfortunately, most upgrade devices are flawed by little inconsistencies reminiscent of a recent TV commercial satirizing a low cost muffler shop that



advertises a \$9.95 replacement muffler - BUT IT WON'T WORK ON Y'ER CAR - HAR HAR!

AOX Inc. has announced a tiny five-chip circuit card that plugs directly into the **80286** socket of any AT class machine to upgrade it to **80386** status. The chip contains a **16 MHz 80386SX** chip and AOX's proprietary cache control chip. The Intel **80386SX** microprocessor is a **16-bit** version of the **80386** line. This allows use in an **80286** machine which is inherently limited to a **16-bit** bus. The price of the **80386SX** processor board has not been set and AOX plans to sell the board to original equipment manufacturers only. AOX Inc., 486 Totten Pond Road, Waltham, MA 02154; (617)890-4402.

Advanced Micro Devices has taken a different tack altogether. Company officials claim there isn't any operating system or software to speak of that effectively take advantage of the **32-bit** bus touted as an advantage of most **80386** systems. The company has announced a **25 MHz** low-power **CMOS** version of the **80286** microprocessor. This could lead to some pretty spicy laptop machines based on these fast **80286** chips.

FAX TRIVIA

Sales of facsimile machines are reaching frenetic levels with over **900,000** units projected for 1988. Yet the boom was a good long time in coming. In 1888, over **100** years ago, professor Elisha Gray invented the **TELAUTOGRAPH** machine. The device sent handwritten copy over a two-wire circuit and was demonstrated for the public at the Chicago World's fair in 1893. Legend has it that Gray also invented what was essentially a telephone, but was beaten to the patent office by over three hours by Alexander Graham Bell - thus rescuing us from the possibility of

a January 1984 breakup of the GRAY TELEPHONE SYSTEM.

The Telautograph Company is still in business by the way and just recently announced another innovation. The **\$870 OMNINOTE** device is used to communicate with other **OMNINOTE** users anywhere within an office building. It uses the ac power line as the transmission medium - no twisted wire, special cabling, fibre-optic devices etc. Just plug it in and start sending. Telautograph, 8700 Bellanca Ave., Los Angeles, CA 90045; (800)848-1987.

POCKET FAX/MODEM

Recall from an earlier issue our review of Touchbase Systems' **WORLDPORT 2400** pocket modem. Now the company has announced a combined facsimile and modem in a single pocket-sized package. The **WORLDPORT 2496** is a scant **4.81 X 2.75 X 1.00** inches and weighs **7.5** ounces. Yet it packs a **9600 bps** Group III facsimile capability along with a **2400 bps** modem. The unit is ideal for laptop use. The unit is priced at a very proud **\$699**. Touchbase Systems, Inc., 160 Laurel Ave., Northport, NY 11768; (516)261-0423.

PC REMOTE CONTROL

Many modem owners never see an electronic bulletin board system or an online service. It just may be that the primary reason to own a modem at all is to communicate between the office computer and the one at home - or from your laptop back to the desktop at the office. While the link is increasingly usable as higher speed modems become available, the crucial element is software to effect the connection.

Dynamic Microprocessor Associates has developed a remote control software program titled **PC ANYWHERE III** that by all accounts is quite the begonias for making the trip between two machines by modem. Not only does it provide file access, but you essentially have control of the remote machine much as if it were an extension of the one on your lap. You can run spreadsheets, database programs, and word processors resident on the remote machine. Only the modem speed causes a noticeable difference in operation from being at the home keyboard. The program is **\$145**. We'll try to take a closer look at this program in a future issue. Dynamic Microprocessor Associates, Inc., 60 East 42nd Street, Suite 1100, New York, NY 10165; (212)687-7115.

AC POWERLINE LAN

Carrier Current Technologies has developed an **RS-232** serial connection scheme for microcomputers termed the **Carrier Net**. The news here is that the connection is made via a buildings AC power wiring. Plug it in between your **RS-232** and the wall outlet. Data is impressed on the **60 Hz** power line at an im-

pressive **38.4 kbps**. Up to **16** computers/printers/etc. can be connected in a single building without stringing any new wire at all. The unit starts at **\$199** per node. Carrier Current Technologies, Inc., 1804 West Southern Parkway, Bldg A-112, Durham, NC 27707; (919)490-4970.

OPTUNE HARD DISK UTILITY

Hard disk drives are a pleasure to use if you are accustomed to waiting on floppy drives to load programs. But speed, like many drugs, can be both addictive and require ever higher doses to obtain the same effect. Hard drives just don't seem as fast after using them for a period of time. Actually this is not all imagination. Hard drives really aren't as fast after you have used them for awhile.

Each time you save a file to the hard drive, it must go through a process of locating blocks of space large enough to save the file. To maximize the use of disk real estate, the system will quite happily break your file into 15 different pieces and scatter them over the disk surface where ever it can find space. This breakup is termed **FRAGMENTATION**. The one drawback to this is that it slows down the process of retrieving the data. Essentially, the more you use your hard disk drive, the more fragmentation naturally occurs. And the greater the fragmentation, the slower the drive.

To alleviate this, a number of **DEFRAGMENTATION** software programs have come on the market. Typically, these programs load segments of the disk into memory, clear some disk area, and rewrite the files to contiguous blocks on the disk. For most systems you can count on spending twenty to thirty minutes on this disk cleanup process. But the increase in disk drive performance is so dramatic, it is well worth enduring the task.

Gazelle Systems of Provo Utah has pretty much made all other programs of this ilk obsolete. Their **OPTUNE** package is relatively cheap at **\$99** and de-frags hard drives in an incredibly fast time of a little over two minutes for most **20 MB** drives the first time it's run and as little as **30 seconds** on a daily basis. The program has a nice interface but the speed is the notable element in this program. The process is just not worth a half hour of your time when this program can do the job in under three minutes.

Another element affecting disk drive speed is termed **INTERLEAVE**. This is simply the numbering scheme or "firing order" of data blocks on the disk surface.

Some equipment merchants have been selling the concept that a **1:1** interleave is inherently faster than

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MICROLINK D

(303) 237-8575

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- 1200/2400/9600 HST Baud
- Over 200 Megabytes of On-Line Storage
- Excellent Download Library
- USA Today Decisionline

The Microlink systems are designed and operated for the serious BBS user. We have been serving the PC BBSing community since 1985 with quality shareware and public domain downloads, as well as interesting and informative message boards. Full access to Microlink B and Microlink D is limited to registered users, and is available for the low cost of \$25.00 (one-time access fee). Call either system today for additional information on becoming a Microlink Member.

other interleave factors leading vast numbers of people to "correct" their interleave to 1:1 to speed up their drives. Generally they enjoy the opposite effect in that disk access slows down dramatically.

The drive platters of a hard disk spin at a single continuous and fairly carefully controlled speed no matter what the interleave factor selected. The disk controller will transfer data at particular rate largely controlled by the overall system processing speed. Variable interleave is a feature that allows you to match the speed of the processor to your disk drive for optimal data transfer. If you are matched to your drive at a 2:1 interleave and change it to 1:1, you will decrease operational efficiency - speed.

To change the interleave on a disk drive, by all that's DOS, requires a low level format of the drive. All data is destroyed in the process. Somehow, OPTune actually performs a low level format without damaging any data at all. This "on the fly" reformat is done to the interleave factor calculated to be most efficient for your system. Don't be upset if it picks a 3:1 interleave (for most systems the most efficient).

The most critical element of a machine's apparent speed to the user is NOT the blazing 25 MHz crystal clock and is NOT even that dependent on the vagaries of the 80386 versus the 80286 microprocessor chip. The hard disk drive has a more critical impact on the

user's impression of speed for most applications than any other factor. OPTune can have a dramatic effect on that drive speed. And it does it faster and more conveniently than anything we've seen on the market. It HAS been reported first-hand to have some difficulties with older hard drive cards such as Plus Development's Hard Card. Do NOT use this program on those drives at the risk of losing your data. But on the stock Seagate and Miniscribe half-heights we tested using DOS 3.3, OPTune ran flawlessly. And it is supposed to be DOS 4.0 compatible as well. Gazelle Systems, 42 North University Ave., Suite 10, Provo, UT 84601; (800)233-0383. We saw it at Denver Tech Computer, 6801 South Dayton Street in Englewood CO, 80112. They are offering a 30% discount on software during January if bring your Denver PC Boardwatch issue in.

LOCAL ACCESS

C.A.R.L. STILL IMPROVING

The local Colorado Alliance of Research Libraries (CARL) is shaping up as one of the premier online bargains in the nation. The service offers access to most libraries in Colorado with citations covering some 2,917,357 publications. The service handles over 30,000 daily users via 535 terminals located in libraries and nine public-dial telephone ports accessible using modem and computer. The service is totally free to callers and allows searches by keyword or

author. While it does not provide full text of all publications, it can give you the title, publisher, author, date, call number, and library of an entire series of publications on any entered subject or written by any entered author. As such it provides a remarkable research tool for students and information professionals.

The service runs on a Tandem Computer running the C10 operating system and features a staggering 34 Gigabytes of actual disk storage capacity.

Within the past year the service has grown dramatically, adding such services as the *Grollier Academic Encyclopedia* online. This database is normally a surcharge service on commercial services such as Compuserve, GEnie, and the Source. It's totally free on CARL.

Recently the service has added several full text databases including *INFOCOLORADO* and *METRO DENVER FACTS* giving pertinent data on our local economy and industry. Last November, they also added a database of articles appearing in periodicals titled *UNCOVER - ARTICLE ACCESS*. Internally, this is known as the Serial Access and Control System and it now offers access to 35,000 articles from nearly 2000 unique serial publications (magazines/newspapers). CARL projects access to over 10,000 titles by late Spring 1989.

In browsing around CARL to find out more about *UNCOVER*, we came across another much smaller, more unassuming service titled simply *FACTS* on the CARL main menu. It turned out to be a database titled *A MATTER OF FACT* compiled by Pierian Press of Ann Arbor Michigan. The service is a digest of current facts with citations to sources gathered from periodicals, newspapers, and congressional hearings. We noted articles from *Newsweek*, *US News and World Report*, and the *London Times*. The full text of the articles is not necessarily provided. Rather, each entry extracts certain statistical data of interest from articles or provides a summary of what was said - usually in about 15 or 20 lines on screen. We had a ball with this database. Entering *MODEMS* as a search word, we found that a February 1986 article in *Newsweek* estimated 3% of American households had a modem. An earlier 1985 entry projected 32 million households would have modems by 1989. Entering *TELEPHONE* unearthed the fact that Japanese callers average 390 telephone calls annually while their American counterpart makes 1400 calls per year. Finally, we entered *GIN* and learned to our dismay that in a 1985 article in the *London Times* it was reported that lemons sold in London shops were covered with a wax fungicide mixture in concentrations 20 times that considered safe. Since little lemon peel is actually ingested by the

public, this was not really such a problem. However, when dunked in gin and tonic, the alcohol causes a chemical reaction releasing the fungicide into the drink. Not only are we malaria free due to our evening Bombay and tonic, but it would appear that there is no fungus among us.

We list all nine **CARL** public access dial-up numbers in our list of BBS at the back of this issue: (303)830-2265 works for us. Colorado Alliance of Research Libraries, 777 Grant, Suite 304, Denver, CO 80203; (303)861-5319 (voice).

CHATFIELD ARMORY BBS

Dave Bell of Littleton likes to play with guns. He's a licensed firearms dealer and owns a business by the name of **CHATFIELD ARMORY**. Now he owns a BBS by the same name at (303)972-9023. The system runs on QuickBBS software and features FOR/SALE message areas for new or used firearms. We found a single firearm-related software program as well titled **BALISTIC.ARC** that seemed interesting if you're curious as to where things are likely to land after the noise goes away. Essentially, callers can dial in to this system and advertise used handguns, rifles, shotguns, or blast-o-rama paraphernalia of any kind by message. Mr. Bell, or another caller might just make you an offer. Naturally, new and used firearms are available for sale and Mr. Bell is quite willing to quote you a price on almost any model. Our dim recollection from days of yore in Uncle Sams canoe club was that a gun was something you cleaned out with a mop and you could generally look down the bore by sticking your head inside it. Anything you could hold in your hands was termed a "piece" or a "firearm" or more likely a "rifle" but never a "gun" with one notable exception. This is my rifle, this is my gun, this ones for fighting, this ones for . . .

R:BASE USER GROUP BBS

Since personal computers became somewhat personal, the database program of choice has been dBase. As in many things, because it was early on the scene it developed a following. Much as Word Star once dominated the word processing scene and Lotus 123 the spreadsheet market, dBase has pretty much had a hammerlock on database use. And for the same reasons. Once the computing populace invested time and effort in learning a program, the retraining costs usually far outweighed any advantage in switching to another system no matter what the promised capabilities.

Those of us a tad late in discovering the 10,000 ways a good data base program can make life easier were

not hobbled by such bias when selecting a database. And there are several databases that are frankly more powerful and easier to use than dBase: Paradox and R:Base spring immediately to mind. R:Base in particular has developed a strong following. The program is hardly new. It started life as a mainframe product titled **RIM** used initially to track the components of aerospace vehicles - notably the tiles on the space shuttle. A few of the principals in design of this system left the aerospace firm to develop a version for microcomputers - **MICRORIM**. The product has since gone through a number of revisions including R:Base 4000, R:Base 5000, R:Base System V, and most currently, R:Base for DOS.

And Microrim has been good about upgrades and support. They operate a support BBS in Redmond Washington at (206)881-8119 providing a wealth of information on the use and abuse of the R:Base database programs.

R:Base user groups have sprung up around the country. Locally, we have a new R:Base User Group and they've brought up a local R:Base BBS at (303)422-2149 using Wildcat software. The system serves primarily as a club support function and a local R:Base newsletter is available online. Further, they import some fascinating files from the Mother Ship back in Redmond. These include a summary of most frequently asked questions compiled by the R:Base telephone support people. And Microrim publishes a monthly electronic newsletter on R:Base called **Microrim ONLINE**. This newsletter is packed with hard core technical information on how to milk R:Base for maximum utility. The local system also features an online list of 29 R:Base user groups operating all over North America. Essentially, anything of interest on the Microrim support BBS will probably show up on this system within a few days. If you're not really in a hurry, you can get the info locally and save the long distance charges. The home office is Microrim, Inc., 3925 159th Ave. N.E., Redmond, WA 98073. Info on joining the local support group here can be viewed on the club BBS. For the curious, Denver PC Boardwatch maintains both subscriber lists and list of BBS on the R:Base System V.

LONG DISTANCE USA

THE CONSUMER AND BUSINESS NETWORK

Ken Wilcox of Glendale California is serious about running a pay BBS on par with the big commercial services. His system, termed **THE CONSUMER AND BUSINESS NETWORK**, comes close. The service operates at (818)360-4679 using the new **2.1** version of **TBBS** software. The new **TBBS** runs very fast and is much more attractive than the previous version.

TCBN runs on three telephone lines serving the greater Los Angeles area.

Mr. Wilcox has assembled an awe-inspiring collection of very current information. An excellent file area for IBM and Macintosh machines is nice. But the real value in this system is the many small, unusual text files and news services he displays. **USA Today Decisionline Update** is online. But **TCBN** also offers an online newsletter by the Small Business Administration. Further, you can order print magazines of almost any variety online.

We found a service titled **NEWSBYTES** extremely interesting. **NEWSBYTES** is an online weekly newsletter on the subject of computers and communications that has been in print (phosphor?) since 1983, making it one of the oldest electronic publications around. The service normally resides on the commercial service **THE SOURCE**. It is also available on a select number of bulletin board systems. It provides roughly **90KB** weekly of information on various developments in the world of PC computers.

Mr. Wilcox also supports some local advertising including real estate listings, classified advertisements, and a special business card section where professionals post ads very much like business cards. The real estate ads are complimented by a mortgage interest area listing the latest rates.

The system is professional from top to bottom and has drawn a healthy crowd of subscribers in its first couple of months in operation at an annual rate of **\$45**. Trial memberships are available in three month increments at **\$15**. There are no amateurish threats on your immortal soul for not subscribing. Non-subscribers are welcome to dial in and look about for 30 minutes at a time. Services such as Newsbytes and USA Today are only available in old sample editions until the subscription is paid but you'll get a good idea of what this service has to offer before you need to sign up. The Consumer and Business Network, 249 North Brand Blvd., Suite 345, Glendale, CA 91203; (818)360-4679.

THOMAS BUSINESS SYSTEMS INC.

Thomas Business Systems Inc. has operated for twelve years as a Boca Raton broker for used computer systems and components - primarily mainframes and Digital Equipment mid-range units. They claim to be one of the oldest used computer component brokerages in the world. In the past few years, they've naturally evolved to cover PC systems and components as well. The company has developed a database of **13,600** items including the entire **5,500** IBM parts catalog available to dealers, **4,400** DEC items, and **3,700** assorted items which may be one of

EXEC-PC BBS

50,000 FILES FOR YOUR PC —AS CLOSE AS YOUR MODEM— BBS 414-964-5160

Exec-PC, the country's largest electronic Bulletin Board System (BBS), has the most extensive online collection of software available anywhere. Yours for the asking.

What the magazines say: "... The biggest, meanest, most oft-dialed and technologically audacious BBS this side of Silicon Gulch."

Milwaukee Magazine, June 1987.

"Exec-PC, the bulletin board answer to SuperStation WTBS, connects PC users continents apart. The big board caters to business PC users, many of whom treat it 'as a dirt-cheap [PC] consulting service,' according to system operator Bob Mahoney. 'Some of the foremost experts in the country call this system,' he says. Exec-PC's storehouse includes 50,000 public domain programs, fifty conference areas ranging from CAD to hardware acceleration, and some of the slickest conferencing and electronic mail (E-mail) software to scroll across a screen."

PC World
Vol. 5 issue 7, July 1987 p. 72

WHAT YOU COULD HAVE

Would you like public domain and shareware word processor programs, communications programs, or excellent database management systems? How about personal money managers, or General Ledger programs? If that is not enough, look at the 3000 games and 15,000 free business oriented programs, utilities, tutorials, and reviews. This gives you everything from hard disk reorganization and backup to stock market management systems. We also maintain the *entire PC-SIG collection* online, the 1000+ diskette collection of public domain software from California.

WHO HAS IT?

Exec-PC owns and operates the nation's largest electronic Bulletin Board System. Through our BBS, our huge software collection is available to anyone who has access to a modem and a telephone line. We have more than 70,000 individual files available for immediate download to your computer, 24 hours a day, every day.

WHAT IT IS

The BBS consists of a large computer with BIG disk drives (more than 3 gigabytes!) and many phone lines connected to it. The computer currently has 90 phone lines, allowing it to talk to 90 callers at once; it receives about 2000 calls per day. Using the BBS is easy, since it is menu driven and you simply choose what you want to do.

WE SURE HAVE FILES

A typical user will call the BBS, ask the BBS to show what files are new since his or her last call, find files of interest, then transmit those files across the phone line. After hanging up, the caller can examine and use the new software.

WE SURE DO TALK

Our BBS also has an active conference system where hundreds of people share ideas and solutions. Some conferences include: PC General Topics, Communications, For Sale, Programming, Desktop Publishing, LAN, Graphics, Hardware Speedup, CAD/CAM, Private e-mail, etc. Why pay expensive consultants when there are hundreds of experts available in our forums and conferences?

HOW DO I ACCESS THE SYSTEM?

The Exec-PC BBS is available through either direct dial-up, or through a new service called Telenet PC Pursuit. Long distance callers enjoy PC Pursuit because it allows unlimited long distance calling for \$25 per month. The PC Pursuit service is offered by GTE/Telenet. Contact them at 1-800-835-3638.

HOW TO CALL THE EXEC-PC BBS

1. Set your asynchronous modem for any speed up to 2400 baud. (Call for 9600 baud info.) 8 data bits, No Parity, 1 stop bit.
2. Start up your communications program.
3. Dial 414-964-5160.
4. The BBS will ask for your name, then you will be guided into the menus.

IT IS FREE, BUT

You can call the BBS at any time without registering. You can tour the system, read messages, and download some of our files. For greater access privileges you may register at the following rates: \$20 for 3 months or \$60 for one year. You may subscribe online with VISA or MC, or by credit card, check or money order with the form below.

Exec-PC, Inc.

P.O. Box 11268 Shorewood, WI 53211

Voice Orders 414-963-2880 BBS 414-964-5160



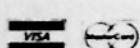
Prices & Specifications subject to change without notice.

Exec-PC BBS Registration Form

BBS 414-964-5160

TO: Exec-PC, Inc. • P.O. Box 11268 • Shorewood, WI 53211

YES! Register me on the Exec-PC BBS for full access to the country's largest collection of PC software plus thousands of informative messages and conferences.



1 Year \$60



3 Months \$20

Check Enclosed

Visa

MasterCard

Credit Card Account # _____

Expires ____ / ____

Name _____ date _____

Address _____

City _____ State _____ Zip _____

Telephone (_____) _____

Company (optional) _____

Name you will use for Logon to BBS (required)

First _____ Last _____

Password _____

the largest databases of used items available. In the last few years, this database has been placed on an online system to allow brokers access from a variety of sites.

In recent months, the company has been barraged by inquiries from PC owners who wanted to know what their old system was worth and how to sell it. As a result, TBS has opened up their online system to the public at no charge to allow callers to dial in and use the system as a "blue book" for computer systems and components. Additionally, callers can obtain quotes for new PC systems from TBS and even advertise their old system online at absolutely no charge. According to Phil Thomas, president of the firm, they have no plans to charge users for the service. The system is available at (407)395-7057. Thomas Business Systems, Inc., 4301 Oak Circle, Suite 11, Boca Raton, FL 33431; (407)392-2005.

RADIOACTIVE WASTE INFORMATION

The Rocky Flats Arsenal just north of Denver has been the primary site for development of plutonium trigger devices for use in nuclear weapons systems. This is the type of "glow in the dark" fun zone that cities all over the country would give anything to have in their neighborhoods but fortunately, it's all ours. The growing concern nationwide over the shipment, storage, and general control of substances considered obnoxiously poisonous for periods of a quarter-million years or so has particularly affected western states which are generally considered to be far enough from Washington D.C. to significantly lower the threat to politicians of national stature. But they have allowed an online information system on the subject in the capitol itself. The **Office of Civilian Radioactive Waste Management INFOLINK** operates at (202)586-9359 using PCBoard software. The system has no bulletins or conferences to speak of. All information is contained in text files available for download. We found files discussing ground water considerations for underground nuclear waste depositories quite interesting. Likewise, a file describing the testing and development constraints for caskets to carry nuclear waste on trucks was enlightening. A department newsletter is put out every two months called the **OCRWM Bulletin** and available for download. Glenn Truitt is sysop. If you have an interest in nuclear waste or want to know how you can get a repository slated for your area, this information system would be a good place to start.

NATIONAL GENEALOGICAL BBS

Don Wilson operates a fascinating Opus BBS in Arlington Virginia for the **National Genealogical Society's Computer Interest Group**. The system is

available at (703)528-2612 and operates as Net 109/Node 650 in the Fido Network. The system is home to the Genealogy Echomail conference which is one of the top four echomail conferences in Fidonet based on daily message traffic (80-100 per day). The system features an outstanding collection of shareware programs for tracing your family tree and a file area devoted to informational texts on the subject of genealogy. One example that caught our ever wandering eye was **VTLRCDS.TXT**. This file provides the mailing address/contact information for the location of vital records for all 50 states. The **GBBS.TXT** file provides a list of BBS all over the country devoted to genealogy. Naturally, there is information on the society along with instructions for joining. We also noticed some intriguing shareware programs for calculating calendar dates and some tips on grave stone perusing and cruising. This system is very much on target with its title and provides a fascinating introduction to where the skeletons really are in our nation's capitol. National Genealogical Society, 4527 Seventeenth Street North, Arlington, VA 22207.

NATIONAL BUREAU OF STANDARDS

The National Bureau of Standards Institute for Computer Science and Technology in Gaithersburg Maryland operates a system titled the **MICROCOMPUTER ELECTRONIC INFORMATION EXCHANGE** or **NBS-MEIE** at (301)948-5717. Ted Landberg and Lisa Camahan serve as sysops under the direction of J.H. Burrows, director of the Institute for Computer Sciences and Technology. The system purports to provide information on the acquisition, management, and use of small computers to federal government offices and private industry. The issue of computer security is probably the largest topic covered on this system although recommendations are provided on a number of topics. They also publish a free newsletter on the subject. Address requests to Ms. Shirley M. Radack, Institute for Computer Science and Technology, National Bureau of Standards, Room B151, Technology Building, Gaithersburg, MD 20899; (301)975-2832.

AMERICAN TELEWEB

Dave Silverberg of Los Angeles heads up a company named American Teleweb that is intent on running a successful commercial system in **TELEWEB** at (213)372-4050. The service is even modeled after CompuServe with both menus and **GO XXXX** shortcuts. The system is supported by the information providers on it rather than by subscription. The **JOBS** area, for example, provides an excellent searchable database of over 300 job openings at Rockwell International, Hughes, and Exratek Corp. You can read

about their benefits package and even upload a resume online. Ann Leung Realty provides a **BEST DEALS** feature listing hot Real Estate offerings and Pacific Mortgage Company provides a fairly comprehensive menu of current mortgage interest rates. Teleweb has its own online news service covering computer topics, general news, politics, and more

SHAREWARE REVIEW

POWER MENU

Brown Bag Software of Campbell California has been one of the more successful shareware software companies with an ingenious little outline program titled **PC-OUTLINE**. More recently, they've released a menu program/DOS shell titled **POWERMENU** - currently in version 3.13.

For those who spend all day at the keyboard and love nothing better than a little C language code to read over their morning frosty flakes, **DOS** shells and menu systems are considered frivolous and memory hungry programs with little purpose. Either fortunately or unfortunately, large numbers of people are now adopting PC computers with an eye toward using it to do things entirely unrelated to programming. Those whose lives revolve more around sales, accounting, or writing are more interested in what they can do with a computer than what the computer can do with a benchmark program.

PowerMenu essentially combines an excellent menuing program with a moderately functional **DOS** shell program. This allows the non-technical user a means to setup their own menu system once. Subsequently, if they want to call up the word processing, database, spreadsheet, or communications function, they simply select it from a menu rather than enter cryptic **DOS** commands at the command line.

The **DOS** shell program allows users to copy, delete, move, or edit files using predefined cursors and menus along with a graphic tree of the disk drive organization. PowerMenu has a particularly innovative tree structure display. Simply select a subdirectory from the tree and you may expand it to show all files in the subdirectory. Unlike most shells, you still see the tree structure as well. It works very much like expanding a topic in the company's **PC OUTLINE** program.

The striking thing about PowerMenu over other menu systems and **DOS** shells is its screen design. PowerMenu is a **PRETTY** program. Not many software offerings are described as pretty in reviews but PowerMenu uses shadowed menu boxes and highlighting very effectively on a monochrome system and a color

display is absolutely gorgeous. Secondly, although most pretty programs attain beauty at the sacrifice of speed, PowerMenu's operation was noticeably snappy.

The program also includes some little functions not often seen. The **SYSTEM INFO** function shows how much RAM is free, how many serial and parallel ports are available, the date on the **ROM BIOS** chip in the system and so forth. A **RAM STATUS** function shows what programs are installed in **RAM**, how much memory they occupy, and what the initial address is.

Menu setup is extremely simple. The **INSERT** key is used to call up a define window. The menu option title is entered, the path specified, and the actual **.COM** or **.EXE** file specified. If you know what subdirectory your word processor is in and what file is used to start it, you can install it on PowerMenu.

Another touch we liked was the use of an editor - somebody else's. We all have our favorite text editor's and converting to another is just not done once you've developed a loyalty. PowerMenu allows you to specify your own editor and use it from the Disk Manager screen to edit text files.

Our one complaint about PowerMenu was its installation routine. We installed it several times only to be referred to a manual we don't have for further instructions. As it turned out, PowerMenu must be unarchived to a floppy disk with certain files in subdirectories titled **DATA** and **FILES** or the installation will not complete successfully. Locally, PowerMenu is available from **GDP Technologies Micromaniacs BBS** at (303)673-9470 in the file **POWRMENU.ARC**. Sysop Tom Gettys, who is an accomplished programmer, says PowerMenu is the only "civilized" way to run a computer. He also includes a little text file titled **POWRMENU.TXT** explaining the vagaries of installation. We've found this BBS to be an excellent source of shareware programs.

PowerMenu registration is a substantial \$49.95 but that includes a printed user manual and one year telephone support for the program. For those still living in terror of the largely nonexistent virus epidemic, Brown Bag Software maintains a product support BBS at (408)371-7654 where you can obtain the program directly from the publisher and they do not allow uploads to their system. Brown Bag Software, 2155 South Bascom Ave., Suite 114, Campbell, CA 95008; (800)523-0764 voice (408)559-7090 fax.

DENVER LOCAL GENIE SYSTEM

General Electric Information Services has enjoyed some success in the commercial videotext market with their **GENIE** product. The service offers "Round Table" special interest areas on a wide variety of topics, features over 10,000 IBM files available for download and costs \$5 hourly - a significant savings over the higher rates charged by Compuserve and The Source. As a result, **GENIE** has signed up over 100,000 subscribers in just a few years.

Last September, General Electric introduced a version of the service tailored specifically for the Denver area. The system here is titled **GEIs** and operates on a 976 Scoopline at 1-976-4347 (976-**GEIS**).

We've had some questions about logging on to the service since we ran our first story on it last June. To logon to **GEIs**:

- Set your communications program up for 8 data bits, No parity, 1 stop bit (8N1) and 1200 bps operation. These are the normal communications parameters used to connect with 99% of public bulletin board systems.
- Set your **LOCAL ECHO** function to **ON**. When you send a character over the telephone line, most systems "echo" the character back to you over the same line and your terminal program puts it up on screen. **GEIs** does **NOT** echo these characters back. Fortunately, most communications programs feature a **LOCAL ECHO** function to send the character to the keyboard when it's transmitted. If you've ever inadvertently had this function on during normal BBS access, you may have noted double characters appearin on your **SSCCRREENN**. With **GEIs**, you want local echo **ON**.
- On connect, press the **ENTER** key once. You should see a **U#** prompt or perhaps an **INCORRECT FORMAT, REENTER U#**.
- At the **U#** prompt, enter **GEIS** and press **ENTER**.
- The system will respond **HAVE YOU BEEN ON GEIS BEFORE (Y/N?)**. First time users should enter **N**.
- The system will respond with an explanation of the system mail address scheme and a request **PLEASE ENTER YOUR MAIL ADDRESS HERE**: Enter an E-Mail address of your choice up to 12 characters. This can include periods and many people enter their

name or a variant thereof in the form **FIRST.LAST**.

- The system will respond with **PLEASE ENTER YOUR PASSWORD**: Enter your password of choice - again up to 12 characters. **GEIs** will ask you to confirm by reentering the password. Then it will display the main menu.

The **GEIs** system requires no account, no credit cards, and no signup. The service is charged to your US West telephone bill at the rate of \$0.25 per minute. The E-Mail address and password are yours to use. They can be entirely anonymous or you can use your name. Other callers who have your E-Mail address can send you E-Mail via the system.

The system features a variety of areas of interest including stock quotations, news, air fares, etc. A library of thousands of the latest shareware titles for the IBM, Macintosh, Commodore, and Atari machines is gleaned from the parent **GENIE** service. **Denver PC Boardwatch** has its own round table area and most shareware reviewed in this newsletter is available there for download as well along with the current issue of the newsletter. Simply enter **BOARDWATCH** at any prompt.

One service we find particularly useful on a daily basis is the **NewsGrid Headline News**. Enter **NEWS** at any prompt or select item **9 NEWS** from the main menu. **Newsgrid** is a real-time news service provided by Comtex Scientific of Stamford Connecticut. The service provides news items from Associated Press, United Press International, Agence France Presse, Deutsche Presse Agentur (W. Germany), Kyodo News (Japan), and Xinhua (China). There is a "pressroom" you can enter and view news items coming in over the wires "real-time". Naturally, a headline area provides the latest summary.

The most useful part of **Newsgrid** is the Clipping File. You may enter search words called Clipping Keywords into a "profile". This profile is unique to you. All stories coming in are scanned for these search words and stories containing your selected keywords are saved in your profile area. For example, you might enter **BRONCOS, NFL, FOOTBALL**, and so forth in your Clipping Keywords area to snag all stories on football. Remember the E-Mail address and password you entered at logon? Now they come into play. The system "remembers" your identity and the next time you log on with that address and password, your clipping files await your perusal. Naturally we scan for topics containing keywords such as **MODEM, TELEPHONE, ISDN, BBS**, etc. The system retains any stories containing the keywords for the past four days.

Another feature of your profile is **STANDING STORIES**. Newsgrid has over a hundred story categories you may select from to always get that particular data each day. This may be the National Hockey League standings, today's NYSE, New York Cotton Exchange Closing Prices, Treasury Bill Auction, US Consumer Price Index, or even Chicago Butter and Egg Prices. Most economic, commerce, or sports activities having regularly reported data are available this way.

The combination of standing stories and the clippings profile results in your own personalized newspaper reporting on the particular subjects **YOU** find of interest. But it has the resources of at least six international press agencies behind it - making for a pretty thorough review of the day's news from **YOUR** perspective. If you who have to stay in touch with what's going on yet don't have time to read everything in print, this function can change the way you do business.

EDITOR'S NOTES

Over the past few months we've begun cautiously accepting paid advertising in **Denver PC Boardwatch** and the experiment seems to have gone well. Readers and advertisers alike have commented positively on this program and so we will continue it. The added time demands of advertising sales have forced some growth in staff. We welcome Raymond "Rex" Rexroad as our new Advertising Sales Director. Rate card requests may be addressed to him at our usual address. If you would like to discuss the particulars of advertising with him directly, he can be reached by telephone at (303)973-6038.

Denver PC Boardwatch enjoyed a pleasant **1988**. Advances in hardware and software were particularly kind to data communications. We saw the emergence of the "pay BBS" in **1988** to an almost explosive degree. If videotext is to survive and prosper, we look to this grassroots movement to be the driving force behind it. It remains a dubious proposition, in our opinion, to dump \$250 million into a service such as the **Prodigy** venture funded by IBM and Sears with any expectation of profitability. On the other hand, the **EXEC-PCs**, **Atlanta Connections**, and other innovative subscriber based online services should finally find their place in the sun. With access to the public through the Bell Operating Companies' Information Gateway services, many of these struggling entrepreneurs of **1988** will become the Mercedes/BMW crowd of the early **1990s**.

We might offer a few predictions for **1989**. This is going to be a tough period for hard disk drive vendors and it will not be nearly so good for optical disk

developers as they might have once thought. The emergence of **20 MB**, **40 MB**, and perhaps even higher data capacities in the **3 1/2-inch floppy market** will be the data storage rage of **1989**. Hard drives will have to appear in the **300 MB** range to do any damage and the slower optical technology needs to look seriously at **1 Gigabyte** if they want to keep the ooh/ahh factor up to support their current stratospheric pricing.

The **HST Dual Mode** gives everyone permission to look to **V.32** as the next high speed (**9600 bps**) standard. And that means we finally have a viable and affordable standard at that speed. Anyone buying into the higher-speed modem technology should essentially consider **V.32** a requisite and the higher class **Microcom Networking Protocol (MNP)** compression techniques as the means to speed up **9600 bps** to as high as **19,200** over ordinary telephone lines. You'll likely see some bargains in non-standard **9600 bps** modems. Avoid them. By the end of the year, everyone should be able to buy **V.32** modems for less than **\$1000** with some low end models running around **\$600**. For BBS work, the **US Robotics** remains the modem of choice largely because they've made a conscious decision to support BBS. They fully deserve the enormous success they are about to enjoy in coming months and years. This is not only a good modem investment, but probably a good equity investment if they're traded publicly.

The newer **Integrated Services Digital Network (ISDN)** telephone technology is shaping up as something of a disappointment. The potential is absolutely marvelous but it will be slow in coming to market. No one, even within the Regional Bells, seems to know what it is or why anyone would want it. **US West** went so far as to announce general availability in some exchanges and has since backtracked into "trial" status. We could never even talk them into naming a price for an installation. **ISDN** needs a toehold somewhere in the country so equipment vendors have a real market to design equipment for. **Hayes** wouldn't quote us a price for an **ISDN PC terminal adapter card** they've been advertising **FOR OVER A YEAR!** They claim no one had ever asked before. Once the public sees **Fax**, **terminal**, **videotelephone**, **calling party identification**, **online telephone directory**, **simultaneous calls**, all available via a single stereo sound quality console in the family room, **ISDN** will give birth to one of those crazed Christmas shopping seasons where millions of units go out in a single season and writers hack away sagely about the birth of an industry.

Speaking of growth, our story on Helen Burwell's directory of fee based information services was an eye opener for us. Alfred Glossbrenner put us onto this

story and it points up the changes our economy is undergoing right now. Apparently there are many people pretty much intent on making a living from home using a PC and telephone. Information research seems to be one way of doing it. Given the dramatic increase in information available on any given subject, there appears to be no end in sight to this remarkable field. Link Resources estimates that there are currently 15.5 million people working from home. We suspect they've included many who operate part time businesses from home or who maintain an office at home to complement their on site employment. Still, the home office worker appears to be here to stay.

We also saw an interesting statistic from BellSouth with regards to their information gateway. They estimate 20% of Atlanta households have computers and 20% of those computers are equipped with modems. If those figures hold true nationwide, a scant 4% of U.S. households have any online capability at all. In a sense, this is discouraging in that 4% is a pathetically small number. On the other hand, contemplating the 14,000 BBS and 3000 informational databases currently available, the interest by large corporations such as Sears, CBS, IBM, and the regional bell operating companies in videotext and information gateways, and the other current successes in this field based on a market comprising a scant 4% of the population at the logical best, we have to believe that once 20% or 30% or, dare we dream, 40% of the population have access to online services, we will likely see some incredible developments in information technology. The one service that might prove to be the key to drawing that level of participation from the general population is an online telephone directory. The ability to cross reference addresses, telephone numbers, and names would be heady stuff. US West has such information and is even cautiously marketing it at around \$5000 on CD-ROM. With their first halting steps toward an information gateway in Omaha, we suspect it's a matter of time before we hear of online white pages. The CCITT X.500 standard due for release this year would mandate a format for such information including fax, telephone, physical delivery, E-Mail, telex, and more in an online directory. If all this comes together about the time the earlier mentioned ISDN/Home Console becomes available, America will go online in a big, big, way. We'll be there when it happens. Read about it here in 1989.

..
Jack Rickard
Editor Emeritus Flavus Waven

DENVER PC BOARDWATCH JANUARY SUBSCRIPTION OFFER

DIALING DIRECTORIES

Denver PC Boardwatch Newsletter has earned a reputation for providing the most accurate list of electronic bulletin boards and online information services available in Colorado. By popular request, we are now offering the January, 1989 verified list in pre-loaded dialing-directory file formats. These directories allow access to our entire list of 200 BBS from your favorite shareware communications program. The list is available in directory formats for Telix 3.10, ProComm Plus TD 1.1, GT Powercomm 14.00, Qmodem 3.1, and Boyan D3. Available on 5 1/4-inch diskette. \$15.95.

BACK ISSUES DISK

Unable to locate the toll-free 800 number for the Department of Education BBS described in our May 1988 issue? Trying to find the National Geographic BBS we mentioned in March? Or the INTEL product support BBS from July? The free 800 number where you can register your E-Mail address? Details of the USA Today BBS distribution program? We are now offering the entire text (sans BBS list) of all 1988 Denver PC Boardwatch issues in ASCII text format on two 5 1/4-inch diskettes. Use any search utility such as Gopher, ZyIndex, etc., to quickly locate that story you recall from an earlier issue. Additionally we include an ASCII text file providing an index to all 1988 issues. Print it out and keep it with your printed copies.. \$15.95

JANUARY SUBSCRIBERS:

Denver PC Boardwatch is published monthly at an annual subscription rate of \$28. Readers subscribing, renewing, or extending before January 31, 1989 are eligible to receive the DIALING DIRECTORIES diskette, BACK ISSUES diskettes, and twelve monthly issues of Denver PC Boardwatch delivered to their mailbox at a special package price of \$48.

TO ORDER:

Dial (303)973-6038 to charge your order to Master Card or Visa. Or, send personal check or money order to Denver PC Boardwatch, 5970 South Vivian St., Littleton, CO 80127

| | |
|-----------------------------------|----------------|
| DIALING DIRECTORIES disk | \$15.95 |
| 1988 BACK ISSUES disks | \$15.95 |
| Annual subscription | \$28.00 |
| January subscriber package | \$48.00 |

DENVER PC BOARDWATCH

LIST OF AREA CODE 303 ELECTRONIC BULLETIN BOARD SYSTEMS AND ON-LINE INFORMATION SERVICES - JANUARY 1989

| TITLE | PHONE | DESCRIPTION | TYPE | BPS | SOFT | CITY | SYSOP |
|--------------------------------|------------|--|--------|----------|----------|----------------|---------------------------|
| NBS Automated Computer Time | 494-4775 | ACTS - Sync PC Clock to NBS Atomic Clock | Custom | .3/12 | Custom | Boulder | Nati. Bureau of Standards |
| Adelante 104/83 | 443-3292 | Central/Latin America Social Issues | IBM | .3/12/24 | Opus | Boulder | Zhanai Stewart |
| AmNet On-line 104/65 | 1-223-1297 | Animal Rights Issues | IBM | .3/12 | TBBS | Ft. Collins | James Cherny |
| Aurham Public Library 104/48 | 494-7970 | Tradewars Game/IBM Software | IBM | .3/12/24 | QuickBBS | Boulder | Neil Beatty |
| Aurora Chairman | 340-1844 | City of Aurora Council/Mayor Forum | IBM | .3/12 | Chairman | Aurora | City of Aurora |
| Byte Shop 104/311 | 794-5065 | Jobs/Good Echomail/Downloads | IBM | .3-96HST | QuickBBS | Littleton | Dan O'Neal |
| Cable Net Opus | 933-4359 | Excellent Shareware Library | IBM | .3/12/24 | Opus | Lakewood | Ted Gilmore |
| CBA Information System | 329-4159 | Continental Basketball Association | IBM | .3/12 | TBBS | Denver | ??? |
| Chaffillia's Armory | 972-4023 | Firearms for Sale/Trade - Online Games | IBM | .3/12/24 | QuickBBS | Littleton | Dave Bell |
| Christian Protocol | 665-6662 | Bhagwan Shree Rajneesh followers | IBM | .3/12 | Opus | Louisville | Terry Mooster |
| Club Micro 104/88 | 832-5850 | Christian Messages - Bible Text | IBM | .3/12/24 | TBBS | Denver | Ken Johansen |
| CMOS - CO Min Operating System | 322-4078 | *C-Language/Database/Communication Files | IBM | .3-96HST | Opus | Denver | Don Marquart |
| CO State Judicial BBS 104/420 | 831-1704 | Amiga/BM-Utilities-Pictures-Buy/Sell | IBM | .3-96MIC | QuickBBS | Denver | Kevin Tritt |
| Coco County Airport 104/54 | 343-6707 | Colorado State Judicial ADP Department | IBM | .3/12/24 | QuickBBS | Denver | Scott V. Hopla |
| Colorado Broadcasters 104/42 | 572-6256 | TRS Color Computer Support | IBM | .3/12/24 | Opus | Aurora | Ron Bihler |
| Colorado West BBS | 1-241-1966 | Commercial Radio Frequency Lists | IBM | .3/12 | Opus | Denver | Lynn Osburn |
| Comm-Post, The 104/666 | 534-4646 | Grand Junction MUG - Ham/Packet Radio | IBM | .3/12/24 | PCBoard | Grand Junction | MUG of Grand Junction |
| Computer Linkage 104/444 | 499-1022 | Astronomy - TI-PC - 90+ MB of Files | IBM | .3/12/24 | TBBS | Denver | Brian Bartee |
| Consumer Net 104/418 | 455-4764 | Amiga - Atari - IBM | IBM | .3/12/24 | Fido | Boulder | Ron Kuseiski |
| Control Systems 104/417 | 458-6248 | Alcoholism/Mental Health | IBM | .3/12 | QuickBBS | Denver | Red Cedar |
| Cook, The 104/419 | 861-0814 | IBM/Comptelabs Subscription Board | IBM | .3-96MIC | TBBS | Denver | Lupe Raminiz |
| Conner Pub, The 104/414 | 759-8619 | 9:00 PM to 7:00 AM | IBM | .3/12/24 | QuickBBS | Denver | Richard Harper |
| CP/M SIG INC 104/372 | 465-1313 | Messages (32 areas) \$10 annual fee. | IBM | .24 | WWIV BBS | Denver | Richard Douglas |
| Cyber-Zone, The 104/61 | 860-0126 | Oldest User's Group in Area - CP/M - IBM | IBM | .3/12/24 | Fido | Broomfield | Al Lundquist |
| D-Link 1 104/411 | 936-2791 | Science Fiction/USA Today | IBM | .3/12/24 | QuickBBS | Denver | Jonathan Wood |
| Dark Crystal, The 104/421 | 322-2589 | Golden Micro Computer Sales/Support | IBM | .3-96HST | QuickBBS | Denver | Bob Wells |
| Data Bank | 494-0167 | Role Playing Games | IBM | .3/12/24 | QuickBBS | Denver | Steve Boyd |
| Denver Area RBASE Users Group | 422-2149 | IBM Messages | IBM | .3/12/24 | TCOMM | Wildcat | Guido Binetti |
| Dog House, The | 320-0501 | R:BASE Information and Programs | IBM | .3/12/24 | Forem | Forem | Paul Fullerton |
| DROID, The | 983-1901 | IBM/Atari Downloads - FoRem Net Mail | IBM | .3/12/24 | QuickBBS | Littleton | Lonnie Shinault |
| Eagle's Nest 104/315 | 983-0701 | On-line Tradewars and Baseball Games | IBM | .3/12/24 | QuickBBS | Boulder | Leonard Vandermate |
| Education 2000 104/29 | 449-9807 | IBM and Amiga Special Interest Areas | IBM | .3/12/24 | QuickBBS | Littleton | Ronald Olsen |
| eSoft Support | 699-3922 | Education Issues Kindergarten - 12th | IBM | .3/12/24 | QuickBBS | Boulder | Roger Salamen |
| Fido NBS 104/607 | 497-9834 | eSoft Inc. TBBS Software Support | IBM | .3/12 | TBBS | Aurora | Phil Becker |
| Front Range Online Systems | 486-2296 | National Bureau Standards - Jobs SIG | IBM | .3/12/24 | Opus | Boulder | Cathy Nicollotti |
| Front Range PC Users Group BBS | 1-493-4094 | Home of CRNEWS - 104/213 | IBM | .3/12/24 | QuickBBS | Broomfield | Gary Jones |
| FutureWave BBS 104/57 | 440-7425 | Fort Collins Group - Computer Express | IBM | .3/12 | Wildcat | Fort Collins | Tom Oppenheimer |
| Gay Community 104/19 | 795-1215 | Games / C Language / MIDI 6PM-7AM | IBM | .12/24 | Opus | Boulder | Mike Reetz |
| GDP Technologies BBS | 673-9470 | Messages / Downloads for Homosexuals | IBM | .3/12 | QuickBBS | Littleton | ??? |
| Grizzly King | 666-0824 | CoreWars Game/C Language/Great Shareware | IBM | .3/12/24 | Wildcat | Lafayette | Tom Getty |
| Grotto, The | 694-9050 | Freeware/Colorado Outdoors/Programmers | IBM | .3/12/24 | TBBS | Aurora | Bob McDuffie |
| Hello Denver | 894-0125 | Amiga, Pascal - Ebert Personal Computers | IBM | .3/12/24 | TBBS | Aurora | Vincent Veritas |
| In To The Night 104/31 | 659-1897 | Sigs for Specific Hardware/Software | IBM | .3/12 | Opus | Fort Lupton | Steve Woolridge |
| Info Source System 104/509 | 680-5109 | IBM Game Files 9PM-7AM | IBM | .3/12/24 | QuickBBS | Aurora | Kris White |
| Into The Wind 104/63 | 939-9272 | Under construction | IBM | .3/12/24 | Opus | Boulder | Bob Reneman |
| Investment Lounge | 759-3721 | Support for Shannal Software 10P-11A | IBM | .3/12/24 | Opus | Aurora | Dana P.Simer |
| Lakewood Department of Safety | 987-7388 | Excellent Investment/Financial Topics | IBM | .3/12 | TBBS | Aurora | Mark Greve |
| | | Police Sponsored - Law Enforcement Msgs | IBM | .3/12 | REBS | Aurora | Larry Scheideman |

| | | | | | | |
|--------------------------------|---------|------------|---|----------|----------|--------------------------------------|
| Last Resort, The | 104/111 | 530-9089 | MiniScribe On-line Customer Support | Opus | Boulder | Vic Robertson |
| Lensman, The | | 979-8953 | Science Fiction/Fantasy-Invitation only | GT Power | .BM | Greg Bradt |
| Lodge, The 104/212 | | 420-0305 | Anvada Quick BBS Board | Arvada | .BM | Harold "Monty" Montrose |
| MACE 104/416 | | 331-0982 | Metro Area Computer Enthusiast | .BM | 3/12/24 | Bucky Carr |
| Martin's BBS | | 973-5250 | Downloads/Messages | .BM | 3/12/24 | Recently Up - General Communications |
| Master Work, The | 104/55 | 341-6614 | Hardware Sales - \$10 Annual Fee | .BM | 12/24 | John Martin |
| Maverick | | 1-434-4211 | PCB-Echo Net/260 MB of Files/Online Game | .BM | 3/12/24 | Roy Prickett |
| Metamorphasis | | 1-772-7229 | Denver's Premier Macimaking Service | .BM | 3/12/24 | David Fouts |
| Micro-Date 104/64 | | 455-4793 | Good Download Library - USA Today News | .BM | 3/12/24 | Tony Fermi |
| Microlink B 104/108 | | 972-9600 | USA Today Over 200 MB Doesn't Break | .BM | 3/12/24 | Oscar Barlow |
| Microlink D 104/711 | | 237-8575 | Professional Comp. Sales Inc./Astronomy | .BM | 3/12/24 | Datemaster |
| Microlink Minus Two | 104/204 | 329-9598 | Fido News/List | .BM | 3/12/24 | Girard Westerberg |
| Mile Hi Tech Fidonet | 104/56 | 973-9338 | Fido Board | .BM | 3/12/24 | ???? |
| Mile High Net | | 671-7308 | Search Service for Missing Persons | .BM | 3/12/24 | Lakewood |
| Missing Persons BBS | | 861-4607 | GT PowerComm BBS | .BM | 3/12/24 | Paul Smith |
| NetComm BBS | | 790-8349 | Inner Development, Natural Health & Envir | .BM | 3/12/24 | Oscar Barlow |
| New Age Bulletin Board, The | | 665-9152 | Basic/dBase/Assembler/C Programming | .BM | 3/12/24 | Dave Miller |
| NightFyer 104/210 | | 467-9199 | (NATO) Tradewars - SI Droids games | .BM | 3/12/24 | Dave Sulter |
| Northern Area Telecomm | 104/606 | 1-669-2553 | UCHSC School of Nursing | .BM | 3/12/24 | Bill Watts |
| Nurse Link 104/52 | | 270-4936 | Armenian Electronics Consultant | .BM | 3/12/24 | Harold Piser |
| OKY BBS | | 494-0533 | Consultant Directory/Desktop Publishing | .BM | 3/12/24 | Marcel Madonna |
| On-Line Consulting 104/45 | | 449-5251 | Boulder Home Grocery Delivery \$5 + 5% | .BM | 3/12/24 | Byron L. Ferguson |
| On-Line Shopping Service | | 442-5125 | Public Psychiatry / AI Themes 6PM-BAM | .BM | 3/12/24 | Larry McNeil |
| P2B2: S 104/51 | | 329-3337 | Pc Info Services - List of User Groups | .BM | 3/12/24 | Onnig Kouyoumdjian |
| PCIS 104/904 | | 789-4610 | USA Today Newspaper/4 lines/INFO-MAT Mag | .BM | 3/12/24 | Lee Lasson |
| Phoenix TBBBS 104/739 | | 841-9570 | 170 Meg - Online Order for DB Systems | .BM | 3/12/24 | Pete Dempsey |
| Pinecliffe 104/28 | | 444-7073 | PC Magazine/Tech Journal Files | .BM | 3/12/24 | Claude Warren |
| Priority Business Sys. | 104/41 | 771-8107 | Writers, Lawyers, EDP Auditors | .BM | 3/12/24 | Phil Kaiser |
| Professional System, The | | 740-2223 | Home of Quick BBS Software | .BM | 3/12/24 | Larry Kayser |
| Quick BBS Support Board | 104/24 | 423-3114 | Colorado Highway Department - Planning | .BM | 3/12/24 | Craig Baker |
| R.A.B.B.I.T. | | 757-9509 | Online Games/Tradewars/Chess | .BM | 3/12/24 | John Bilbro |
| Rabbit Mountain BBS | | 460-1093 | Vasta Technology/Denver Fort Int. Group | .BM | 3/12/24 | Bob Voorhees |
| Realtime Control & Forth Board | | 278-0364 | INFO NEEDED | .BM | 3/12/24 | Adam Hudson |
| Rook Mountain RBBS | | 750-2107 | Opus/Binkey Term Support/Pascal/ C | .BM | 3/12/24 | Colorado Dept. Highways |
| Short Line 104/36 | | 778-7312 | Science/Engineering/Turbo Pascal Utils | .BM | 3/12/24 | Kevin Dahlstedt |
| Silver Streak, The | | 790-2534 | The Tavern - Hot 386 with Games/ReadMACs | .BM | 3/12/24 | Jack Woehr |
| SmartQuest I 104/604 | | 469-7014 | The Dragon's Lair - IBM PS2 80 w 115 MB | .BM | 3/12/24 | Steve Komiech |
| SmartQuest II 104/314 | | 978-0510 | Online Games - Tradewars - Meebawars | .BM | 3/12/24 | Alan Applegate |
| SmartQuest IV 104/209 | | 469-0125 | On-line Games, Fantasy, AD&D | .BM | 3/12/24 | Dennis McKinney |
| SmartQuest -The Arena 104/46 | | 761-1634 | Christian BBS / Sound Doctrine Church | .BM | 3/12/24 | John Danny |
| Sound Doctrine Bulletin Board | | 680-7209 | NOAA Solar Flare Forecast / Advisory | .BM | 3/12/24 | Kurt Wiedenhoeft |
| Space Environment Service Cntr | | 497-5000 | Space Exploration Information | .BM | 3/12/24 | Elliot Mosher |
| Space Network | | 494-8446 | Info on Steamboat Springs Area | .BM | 3/12/24 | Dax Davis |
| Squirrel's Nest | | 1-242-7977 | Tradeware & ReadMAC Files | .BM | 3/12/24 | Tim Williams |
| Stone Wall 104/112 | | 499-2676 | C Program Files - C Echo Area 5PM-9AM | .BM | 3/12/24 | US Dept of Commerce |
| Stonehenge 104/39 | | 497-6051 | The Bread Board System Support | .BM | 3/12/24 | Mike Fleet |
| TBBS Net 104/23 | | 699-9248 | MINDS AI TextBase Indexer Support | .BM | 3/12/24 | Boulder |
| Tenus Public BBS 104/43 | | 469-7161 | MINDS Online Textbase - USA TODAY | .BM | 3-96HST | Aurora |
| Tenus RegUser 104/44 | | 341-1404 | Net 104 Coordinator - Lots of Echomail | .BM | 3-96HST | Broomfield |
| The 8th Sea 104/610 | | 252-9235 | Denver PC Boardwatch/USA Today | .BM | 3/12/24 | Northglenn |
| This End Up 104/30 | | 429-2445 | Translations/Data Communications | .BM | 3/12/24 | Rod Lamping |
| Translations Unlimited | | 988-5765 | | .BM | 3/12/24 | Steve Barnes |
| | | | | | Minihost | Westminster |
| | | | | | | Lakewood |

DENVER PC BOARDWATCH

LIST OF AREA CODE 303 ELECTRONIC BULLETIN BOARD SYSTEMS AND ON-LINE INFORMATION SERVICES - JANUARY 1989

| TITLE | PHONE | DESCRIPTION | TYPE | BPS | SOFT | CITY | SYSOP |
|---------------------------|------------|--|--------|---------|----------|---------------|-------------------------|
| Trout Unlimited | 499-2928 | Trout Fishing / Water Condition Reports | IBM | 3/12 | Fido | Boulder | Ralph Stewart |
| Twin Peaks PCBoard | 1-651-0225 | On-line Games | IBM | 3/12/24 | PCBoard | Longmont | Ken Krueger |
| USA Today Distribution | 973-4222 | USA Today Newspaper On-line | IBM | 1/2/24 | QuickBBS | Littleton | Jack Rickard |
| Value Line, The | 363-0422 | On-line Mail/Shopping 8PM-5AM | IBM | 3/12 | QuickBBS | Aurora | Chris Millkin |
| Watchdesk, The | 104/510 | Safety - Arson - Hazardous Material | IBM | 3/12/24 | QuickBBS | Thornton | Emil Hurdellbrink |
| Weyr, The | 104/666 | Good Collection of Game Software | IBM | 3/12/24 | Opus | Westminster | Ken Shimko |
| Wizardy 104/51-110 | 429-2975 | Carries Darwin National BBS List | IBM | 3/12/24 | QuickBBS | Evergreen | Marvin Cook |
| World Peace BBS 104/415 | 670-1416 | Current Events, Politics, Religion | IBM | 3/12/24 | QuickBBS | Denver | Bucky Carr |
| C.A.R.L. Denver | 320-4822 | Colorado Alliance of Research Libraries | Tandem | .24 | Custom | Denver | N/A |
| C.A.R.L. Denver | 830-0519 | Colorado Alliance of Research Libraries | Tandem | 3/12/24 | Custom | Denver | N/A |
| C.A.R.L. Denver | 830-1165 | liaince of Research Libraries | Tandem | .12 | Custom | Denver | N/A |
| C.A.R.L. Denver | 830-1546 | Colorado Alliance of Research Libraries | Tandem | .12 | Custom | Denver | N/A |
| C.A.R.L. Denver | 830-1547 | Colorado Alliance of Research Libraries | Tandem | .12 | Custom | Denver | N/A |
| C.A.R.L. Denver | 830-1548 | Colorado Alliance of Research Libraries | Tandem | .12 | Custom | Denver | N/A |
| C.A.R.L. Denver | 830-21199 | Colorado Alliance of Research Libraries | Tandem | 3/12/24 | Custom | Denver | N/A |
| C.A.R.L. Denver | 830-2241 | Colorado Alliance of Research Libraries | Tandem | 3/12/24 | Custom | Denver | N/A |
| C.A.R.L. Denver | 830-2265 | Colorado Alliance of Research Libraries | Tandem | 3/12/24 | Custom | Denver | N/A |
| C.A.R.L. Denver | 830-2297 | Colorado Alliance of Research Libraries | Tandem | 3/12/24 | Custom | Denver | N/A |
| Beacon Technical Services | 979-2245 | Entertainment Software Authors | Amiga | 3/12 | Oradel | Littleton | Mark Baldwin |
| C.D. Players | 825-0419 | Computer Discount On-line Store! Amiga | Amiga | 3/12/24 | TBBS | Denver | Tony Scott |
| Aces High | 329-6579 | Apple Programming/Messages | Apple | 3/12 | GBBS | Denver | Glen Hayhurst |
| Apple Pi A La Modem | 988-7525 | Apple User Group Messages/Downloads | Apple | 3/12/24 | GBBS | Lakewood | Erik Von Halley |
| APSNet | 693-6737 | Aurora Public Schools Network | Apple | 3/12/24 | GBBS | Aurora | Columbia Middle School |
| Bohemia | 449-8946 | Music / General Messages | Apple | 3/12 | Alphall | Denver | 777 |
| Box's Cabin, The | 424-9185 | Apple / Technical Notes | Apple | 3/12/24 | Protree | Arvada | Kent Roberts |
| C.A.C.H.E. | 745-4960 | CO Apple & Compatible Home Enthusiasts | Apple | 3/12/24 | GBBS | Denver | Gary Edwards |
| City Morgue, The | 442-8498 | Necromaniacal Fixation With Stiff Bodies | Apple | 1/2/24 | GBBS | Boulder | ??? |
| Code 5150 | 696-6673 | Lunatic Discussions / Crazy People | Apple | 3/12/24 | GBBS | Aurora | Chris Thilges (Grunt) |
| Cutting Board, The | 427-2413 | 60 M3 Apple Software and Messages | Apple | 3/12/24 | GBBS | Lakewood | Cutter |
| Dark Side of the Moon | 469-3487 | Matchmaking / Dating for Teens | Apple | 3/12 | Protree | Broomfield | Marc Anderson |
| Denver Deaf-Net | 989-9245 | Hearing Impaired/Computing | Apple | 3/12 | Protree | Lakewood | David Shaneman |
| Funny Farm | 989-0915 | Apple Only BBS | Apple | 1/2/24 | ??? | Lakewood | George Willett |
| Genesis Project | 287-8967 | Apple II General | Apple | 3/12/24 | Protree | Commerce City | Gene Humbert |
| Greely-Com-Net | 1-351-8861 | Modem Users Board | Apple | 3/12/24 | GBBS | Greeley | Lowell Shattraw |
| L&L Support | 420-3568 | Primary GBBS Pro Software Support BBS | Apple | 3/12/24 | GBBS | Arvada | Lance Taylor-Warren |
| Land of Linden | 987-2094 | Fantasy Runquest Games | Apple | 3/12 | Alphall | Lakewood | ??? |
| LES-COM-net | 233-5824 | Lesley College Communications Network | Apple | 3/12 | GBBS | Wheatridge | George Willett |
| Mom's BBS | 690-4913 | General Message/Socializing | Apple | 3/12 | ALFA-III | ??? | ??? |
| Next Generation | 425-6235 | On-line Games | Apple | 1/2/24 | Protree | Golden | Tony ??? |
| Odyssey III | 691-0169 | Adult(18) / Sex Oriented 5PM-8AM | Apple | 3/12 | GBBS | Denver | Sundance |
| Pro Denver | 428-0372 | Proline Unix Emulator for Apple | Apple | 3/12/24 | Proline | Denver | Vince Cooper |
| S.O.B. Lanes, Inc. | 452-6902 | Apple Board with Bowling Theme | Apple | 3/12 | GBBS | Aurora | Simon |
| Trekker World | 368-5011 | Star Trek Fanzine 7AM-10PM | Apple | 3 | Express | Aurora | Robert Morgan |
| Bavarian's Gausithaus | 367-5877 | New Atari BBS Software System | Atari | 3/12 | Carinall | Aurora | Bavarian |
| Charlotte's Web | 367-0668 | Housewife Runs Online Games/Pen Pals | Atari | 3/12/24 | Atari | Brookfield | Bob and Charlotte Davis |
| Four Wheeling BBS, The | 469-4954 | Jeeping / Camping / Outdoors | Atari | 3/12 | Forem | John Ferguson | John Ferguson |
| Generic BBS | 1-857-6881 | Titanic Historical Society Information | Atari | 3/12 | BBS Exp | Fort Lupton | J.A. Sneeringer |
| Hozerville | 985-9760 | Atari 130 with 53 MB of files | Atari | 3/12/24 | TODAMIS | Denver | Jacey Squires |
| Mile High Forum | 431-1404 | Outstanding Atari ST Database - HST 9600 | Atari | 3-96HST | Forem | Arvada | ??? |

| | | | | | | | |
|--------------------------------|-------------|--|-----------|----------|-----------|-----------------|---------------------------|
| Mycroft | 777-8898 | Horizon Computer/National Atari BBS List | Atari | .3/12 | TODAMIS | Denver | Phil Michaelson |
| Ron and Shannons BBS | .978-0298 | Atari Support 5.4 MB XE 130 | Atari | .3/12/24 | OASIS | Englewood | Ron/Shannon Sellers |
| Skyline Computers | .457-0320 | Atari ST Support, Files, etc. | Atari | .3/12/24 | Forem | Denver | Dave Lloyd |
| Vault, The | .796-0539 | USAFIZMAG Member | Atari | .3/12 | Forem | Englewood | Craig Steiner |
| White Runes of Tinuviel | .972-8566 | Tolkien Subjects/Dungeons and Dragons | Atari | .3/12 | STadel | Littleton | Anch Strasheim |
| ZAPI | .367-4103 | Atari/ST/B Bit | Atari | .3/12 | Oasis | Aurora | ???? |
| Phasar | .745-4305 | Teen Conversation - Advice Column | C-128 | .3/12 | C-Net | Aurora | Roy Rush |
| Regimental Headquarters | .375-9556 | Commodore - Military Theme | C-128 | .3/12 | C-Net | Denver | Bob Greear |
| Albuquerque Starport | .279-4655 | Commodore Network Systems International | C-64 | .3/12 | C-Net | Boulder | GreyStone Mindmaster |
| Colorado Commodore Club BBS | .751-3448 | Commodore Computer Info | C-64 | .3/12 | C-Net | Northglenn | ??? |
| Comm-Net Information Service | .340-2473 | C-64/C-128/Amiga Info-Dilds-Messages * | C-64 | .3/12 | Custom | Aurora | Tele-Net Inc. |
| Comm-Net Information Service | .366-7177 | C-64/C-128/Amiga Info-Dilds-Messages * | C-64 | .3/12 | Custom | Aurora | Tele-Net Inc. |
| Enterprise | .320-6470 | StarTrek Theme with 3.6 MB Software | C-64 | .3/12 | C-Net | Denver | Mr. Spock |
| Hack Shack | .688-8406 | Commodore | C-64 | .3/12 | C-Net | Castle Rock | ??? |
| Hideout, The | .699-7810 | Commodore System | C-64 | .300 | 7777 | Denver | Professor Beaker |
| Laboratory BBS/SUPERTAC | .287-5274 | Commodore with Laboratory Theme | C-64 | .3/12 | C-Net | Westminster | Richard Miller |
| Mailbox BBS | .421-8050 | Ham Radio/Sports/Swap/Adult Jokes | C-64 | .3 | C-Net | Westminster | The Nun |
| Nunnery, The | .467-1240 | Foul Language - C-64 BBS List | C-64 | .3/12 | C-Net | Arvada | The Lineman |
| Phone Connection | .426-7969 | Commodore | C-64 | .3/12 | C-Net | Westminster | Bob Hennessy |
| Realm, The | .937-0215 | Royal Theme - Complete with King | C-64 | .3/12 | C-Net | Lakewood | Hack Man |
| Seven-Eleven | .699-7603 | Commodore 64 system | C-64 | .3/12 | NewImage | Denver | John Holmgren |
| Vern's Terminal Exchange | .433-1150 | Commodore Messages/Downloads/Ads | C-64 | .3/12 | Ivory | Arvada | Steve Shockley |
| Computer Know How | .279-0224 | Hard Disk Installation / Tech Support | CP/M | .3/12 | ZBYE | Golden | Bob Simpson |
| Fantasy Mountain PBBS | .278-8369 | Deaf and Handicapped Issues | CP/M | .3/12 | PBBS | Golden | Experience Software |
| Career Connection/DRUG | .671-0801 | ASCII TTY | CP/M | .3/12/24 | DEC100 | Aurora | Jim Turner |
| Mile High Epson User Group BBS | .752-2943 | Job/Resume/Denver Rainbow Users 7PM-7AM | DEC100 | .3-96HST | Fido | Aurora | Dale Bucknam |
| Diatamatch 118/The Brokerage | .796-9721 | MHEUG Club Board | EPSON | .3/12/24 | TBBS | Littleton | Bob Diehl |
| Experience Software | .798-0792 | Adult Matchmaking | Franklin | .3 | DYM | Englewood | Bill Wright |
| HP-BBS 104/34 | .1-229-9719 | Franklin Messages | Franklin | .3/12/24 | Network | Littleton | Steve Sande |
| LaserWriting Desktop Service | .741-4122 | Jokes, Amazing but True stories, | HP-Vectra | .3/12 | RedRyder | Denver | Jon Taylor |
| Magic | .791-8732 | Laser Printing/Scanning/Linotron 300 | MAC | .3/12 | Novalink | Highlands Ranch | John Henderson |
| Mile High Mac Meet | .758-9159 | Macintosh/Apple \$15 Annual Fee | MAC | .3/12/24 | WWIV | Denver | John Henderson |
| Radscan | .1-675-3225 | Denver Macintosh Users Group | MAC | .3-96HST | RSTS9.4 | Rangely | John Henderson |
| Radscan | .1-675-3326 | Rangely PDP11 BBS Multiline - Games | PDP-11/45 | .3/12 | RSTS9.4 | Rangely | John Henderson |
| Boulder Public Library System | .444-2057 | Password RADSCAN - | PDP-11/45 | .3/12 | Tandem | Custom | Eyring Research Institute |
| Boulder Public Library System | .444-2074 | Library Research | Tandem | .12 | Tandem | Boulder | Eyring Research |
| Kings Bench 104/615 | .377-6725 | On-Line Card Catalog - Member C.A.R.L. | TANDY1000 | .3/12/24 | Tandy2000 | Custom | Ralph Allison |
| College Board, The | .979-7299 | Compatible Computer Info Exchange | Tandy2000 | .3 | ??? | Denver | Tom Nielson |
| Minds of Mines (MOM) BBS | .273-3989 | Space Wars Game | Tiger | .3/12/24 | Tiger | Littleton | Joe Applegate |
| Niteline PBBS | .277-1447 | CSM Artificial Intelligence/Geotechnical | TI | .3/12 | Paradigm | Golden | Keith Amann |
| Controller Board/TBBS Island | .690-9423 | Texas Instruments - Lists 193 TI BBS | TI 99/4A | .3/12 | BBSS | Aurora | Mike Hastings |
| Crossroads | .499-0457 | Computer Supplies - Online Sales | TRS | .3/12 | BBSS | Lakewood | Mark Bradford |
| Dinosaur Board | .989-8397 | Discussion | TRS | .3/12 | BBSS | Boulder | Chris Anderson |
| King's Market Bookshop | .1-652-3595 | Obsolete Computer Support/Adventure Game | TRS | .3/12 | BBSS | Littleton | Jim Burt |
| Photo Tech | .665-6091 | Books, Writers, On-line Adventure Games | TRS | .3/12 | BBSS | Littleton | Jim Gerritz |
| PSINet | .781-1079 | TRS 80 / HAM / Video / Camera | TRS | .3/12 | BBSS | Englewood | William Tedder |
| Alpha BBS/Intercomex | .367-1935 | Parapsychology / Near Death Experiences | TRS | .3/12/24 | BBSS | Denver | Cyril Lord/Robert Brumley |
| Temple of Doom | .771-9523 | Enter ALPHA - Ham Radio/Space Topics | TRS | .3/12 | UNAxCess | Englewood | ??? |
| GLOBAL Information | .286-7914 | INFO NEEDED | unknown | .3/12 | Custom | Denver | Jim Comstock |
| Discordian Society | .969-8195 | Fee Subscription / Software Database | VAX | .3/12 | VAX | Denver | Steven Crandall |
| | | | | 12/24 | | | |

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